NON-PUBLIC?: N
ACCESSION #: 9503280252
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Braidwood 1 PAGE: 1 OF 7

DOCKET NUMBER: 05000456

TITLE: Auxiliary Feedwater Tunnel and Main Steamline Room drains not installed per design
EVENT DATE: 02/22/95 LER #: 95-002-00 REPORT DATE: 03/20/95

OTHER FACILITIES INVOLVED: Braidwood Unit 2 DOCKET NO: 05000457

OPERATING MODE: 1 POWER LEVEL: 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:
50.73(a)(2)(iii)

LICENSEE CONTACT FOR THIS LER:
NAME: P. Lau, Regulatory Assurance TELEPHONE: (815) 458-2801 x2957
COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE NPRDS: N

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

On February 22, 1995, it was discovered the Unit 1 drain line from the 1B and 1C Main Steamline Isolation Valve (MSIV) rooms to the Unit 1 Tendon Tunnel (TT) sump was routed to a floor drain in the Unit 1 Auxiliary Feedwater (AF) Tunnel rather than to the Unit 1 TT sump per design. on March 3, 1995, it was discovered the Unit 2 drain line from the Unit 2 Auxiliary Feedwater (AF) Tunnel to the Unit 2 TT sump did not contain the two check valves per the design. It was assumed because the configuration of the exposed piping for the Unit 1 AF Tunnel to the Unit 1 TT sump was nearly identical to Unit 2, Unit 1 was also missing the required check valves. The root cause for each of the problems was a Pre-Service deficiency in that the piping/check valves were not installed per the design drawings during initial construction. The Unit 1 MSIV room drain line was rerouted to the Unit 1 TT sump, the required check valves were installed in the Unit 1 drain line from the Unit 1 AF Tunnel to the Unit 1 TT sump, and a Temporary Alteration plugging the Unit 2

MSIV room and main Steam tunnel drains is in place protecting the Unit 2 AF containment isolation valves (2AF013A through D) from flooding.

END OF ABSTRACT



A. PLANT CONDITIONS PRIOR TO EVENT:

Plant Conditions Prior to the Event (MSIV Drain Pipe):
Unit: 1
Event Date: 2/22/95
Event Time: 15:00
Reactor Mode: 5
Reactor Power Level: 0%
RCS Temperature: < 100 degrees F
RCS Pressure: < 200 PSIG

Plant Conditions Prior to the Event (AF tunnel check valves):
Unit: 2
Event Date: 3/3/95
Event Time: 14:30
Reactor Mode: 1
Reactor Power Level: 100%
RCS Temperature: NOT
RCS Pressure: NOP

Plant Conditions Prior to the Event(AF tunnel check valves):
Unit: 1
Event Date: 3/3/95
Event Time: 14:30
Reactor Mode: 5
Reactor Power Level: 0%
RCS Temperature: < 100 degrees F
RCS Pressure:



B. DESCRIPTION OF EVENT:

During routine activities during Unit 1 maintenance outage A1M05, upon opening the Auxiliary Feedwater (AF)BA! tunnel flood seal openings Monday, February 20, 1995, it was noted that a substantial amount of water was in the tunnel. Initial investigation determined that water from the Steam Generator (SG) being drained, filled the AF tunnel drains and backed up through the floor drains into the AF tunnel. Operations

personnel were immediately notified, and a Problem Identification Form (PIF) was initiated.

The problem was discussed at the next day's Event Screening Meeting, and questions were asked as to the potential flow paths that could have allowed the SG water to enter the AF tunnel. System Engineering personnel (non-licensed) were made aware of the problem. While reviewing the drawings for the drains, it was determined that the water from the SG draining should not be draining into the AF tunnel floor drain, and the question was raised about a possible floor drain pipe leak that could be causing the water.

On Wednesday, February 22, 1995 at 1500, an inspection was performed of the drain line that removes the water from the floor drains in the Unit 1 B/C Main Steamline Isolation Valve (MSIV) Rooms and most of the Main Steam (MS) SB! tunnel. This inspection revealed that the line ended with an open elbow directed into a floor drain in the Unit 1 AF tunnel. This line then drains to the Unit 1 Tendon tunnel. The presence of a direct flow path from the floor drains in the Unit 1 B/C MSIV room to the AF tunnel bypassed the flood seal that is present for the four AF013 valves (containment isolation valves for AF) located in the AF tunnel. During a postulated Main Steam line break, steam would enter the AF tunnel and potentially render the four AF013 valves inoperable, since they are not environmentally qualified.

A 4-hour ENS notification was made at 1732 CST pursuant to 10 CFR 50.72(b)(2)(i), stating the floor drain piping from the 1B and 1C MSIV room was not built per design and creates a drain path into the flood protected AF tunnel. Unit 1 was in Mode 5 at the time of discovery, and did not



B. DESCRIPTION OF EVENT (continued):

require either AF pump to be operable nor the AF013 valves for containment isolation purposes to be operable. Therefore, no immediate corrective action was taken. An action request to correct the problem with the drain line from the 1B & 1C MSIV rooms was initiated.

The architectural design drawings indicated that the subject floor drain pipe was supposed to be routed to a separate imbedded pipe in the AF tunnel floor which drains directly into the Tendon tunnel sump. All the floor drains in the AF tunnel, MSIV rooms, and MS tunnel are routed to the Tendon tunnel sump, via separate pipes. If the subject floor drain pipe would have been installed properly, the pipe would have only passed

through the AF tunnel in a sealed manner, posing no flooding problem.

Byron Station was notified, and efforts began to coordinate a plan to inspect the subject pipe on the shutdown Unit at Byron, and the operating units at both sites. Contingency plans were developed in the event that the pipe was also incorrectly installed on the other units. The contingency plan for Braidwood included the use of plugs to seal the drains in the 1B & 1C MSIV rooms and necessary portions of the MS tunnel to provide the needed flood protection for the AF tunnel. However, all three other units' MS tunnel area/MSIV room drains were found as being plumbed correctly. These inspections took place on February 23 & 24, 1995.

As an additional measure, a review of drain system drawings for both Units associated with the Tendon Tunnel sumps occurred over the next six days. While reviewing the drain line drawings for the Unit 2 AF tunnel to Tendon tunnel sump, the System Engineer (SE) (non-licensed) did not remember the Unit 2 physical arrangement having check valves in the AF tunnel drains matching what was shown on the plant design drawing. The SE thought the piping on Unit 2 between the concrete wall and the vertical run of pipe from the elbow to the sump was insufficient in length to accommodate two check valves.

On Thursday, March 2, 1995, an inspection verified that no check valves were installed in the exposed section of pipe on Unit 2 for the AF tunnel floor drains to the Tendon tunnel sump. At this point engineering personnel were not sure whether the check valves were installed in the concrete or were not installed at all. The floor drain plugs, previously evaluated for placement with the original contingency plan for the MSIV room drain pipe problem, were installed in all Unit 2 MSIV room drains and MS tunnel drains. This was accomplished as a conservative measure to ensure the Unit 2 AF013 valves (containment isolation valves) would remain operable in the event of finding the check valves not installed in the



B. DESCRIPTION OF EVENT (continued):

imbedded portion of the drain pipe. No additional corrective or preventative actions were taken on Unit 1 as it was still in Mode 5 which still did not require the AF containment isolation valves (AF013 valves) being operable.

On Friday, March 3, 1995, an inspection of the floor drain line from the Unit 2 AF tunnel drains commenced. The check valves indicated on the

design drawing were verified to not be physically installed in the line. In order to determine whether the check valves were or were not installed inside the concrete wall (imbedded portion of the pipe) it became necessary to remove the elbow at the Tendon tunnel sump. The elbow connection from the AF tunnel floor drains to the Tendon tunnel sump was a soil drain pipe lead/oakum sealed fit. The elbow was removed and both a visual inspection and an inspection using a stiff wire were used. At 1430, it was determined that check valves were not installed between the cleanout (last entry point into
the drain header) and the removed elbow.
The missing check valves provided a direct flow path from the Tendon tunnel sump to the AF tunnel which negated the flood seal that was present for the AF013 valves located in the AF tunnel.

The 1-hour ENS notification was made at 1455 CST pursuant to 10 CFR 50.72(b)(1)(ii), stating the floor drain piping from the Unit 2 AF tunnel to the Tendon tunnel sump was not built per design and provides a potential backflow path into the flood protected AF tunnel as the check valves preventing backflow were not installed. Unit 2 was in Mode 1 which does require the AF013 valves to be operable. The action taken to plug the drains from the MSIV rooms and the MS tunnel to the Tendon Tunnel sump as a conservative measure protected the AF tunnel from flooding from a High Energy Line Break event or flooding of the MS tunnel. Therefore, the action taken reestablished the flood seal and no additional immediate corrective action was needed for Unit 2. Byron Station was notified of the problem found.

Braidwood Unit 1 was inspected with the same results as Unit 2. Action Requests were written to install check valves in the drain line from the A tunnel to the Tendon tunnel sump per design.

This report is being submitted pursuant to 10 CFR 50.73(a)(2)(ii)(b) for Unit 1, and 10 CFR 50.73(a)(2)(ii) for Unit 2, which states, "Any event or condition that resulted in the condition of the nuclear power plant, including its principal safety barriers, being seriously degraded, or that resulted in the nuclear power plant being: (B) In a condition that was outside the design basis of the plant."



C. CAUSE OF THE EVENT:

The root cause for each of the problems was a Pre-service deficiency, in that the piping/check valves were not installed during initial construction per the design drawings.

D. SAFETY ANALYSIS:

At no time was the safety of the plant or the public in jeopardy as there was no significant amount of water placed in either Unit 1 or Unit 2 Auxiliary Feedwater tunnels. Therefore, the potential for rendering the Unit 1 or Unit 2 Auxiliary Feedwater discharge valves AF013A through D incapable of performing their intended function in their required manner was not present as the valves were never exposed to an environment hazardous to their operation from these pre-design deficiencies.

E. CORRECTIVE ACTIONS:

The Unit 1 MSIV room drain line has been rerouted to the Unit 1 TT sump, the required check valves have been installed in the Unit 1 drain line from the Unit 1 AF Tunnel to the Unit 1 TT sump, and Temporary Alteration 95-2-001 plugging the Unit 2 MSIV room and Main Steam tunnel drains is in place protecting the Unit 2 AF containment isolation valves (2AF013A through D) from flooding.

The Unit 2 check valves for the Unit 2 AF Tunnel to the Unit 2 TT sump will be installed in the near future and will be tracked to completion by Braidwood Nuclear Tracking System action item # 456-180-95-00201. Temporary Alteration 95-2-001 will be removed upon completion of the installation of the check valves. This will be tracked to completion by Braidwood Nuclear Tracking System action item i 456-180-95-00202.

F. PREVIOUS OCCURRENCES:

LER 1-94-003; Emergency Personnel Airlock barrel penetrations missing line plugs. The root cause of this event was a combined effect of a pre-service deficiency, in that the emergency hatch concrete pipe vents were not capped during initial construction, and equipment failure, where it was identified that the Service Air penetration leakage not being completely isolated as the Service Air valves leaked by. The corrective actions were to cap the pipes and repair the leaking valves. These two corrective actions would not have precluded the events described in this LER from occurring.



G. COMPONENT FAILURE DATA:

No component failures occurred.

Commonwealth Edison Company
Braidwood Generating Station
Route #1, Box 84
Braceville, IL 60407-9619
Tel 815-458-2801

ComEd

March 22, 1995
BW/95-0040

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Gentlemen:

The enclosed Licensee Event Report from Braidwood Generating Station is being transmitted in accordance with the requirements for: Unit 1: 10 CFR 50.73(a)(2)(ii)(B), Unit 2: 10 CFR 50.73(a)(2)(ii), which require a 30-day written report.

This report is number 95-002-00, Docket No. 50-456.

K. L. Kofron
Station Manager
Braidwood Generating Station

BJM/dla
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Enclosure: Licensee Event Report
No. 456-95-00200

cc: NRC Region III Administrator
NRC Resident Inspector
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